



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,336	11/13/2003	Kenny Chang	JCLA11475	4087

23900 7590 10/03/2005

J C PATENTS, INC.
4 VENTURE, SUITE 250
IRVINE, CA 92618

EXAMINER

ARENA, ANDREW OWENS

ART UNIT PAPER NUMBER

2811

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/714,336	Applicant(s) CHANG ET AL.	
	Examiner Andrew O. Arena	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

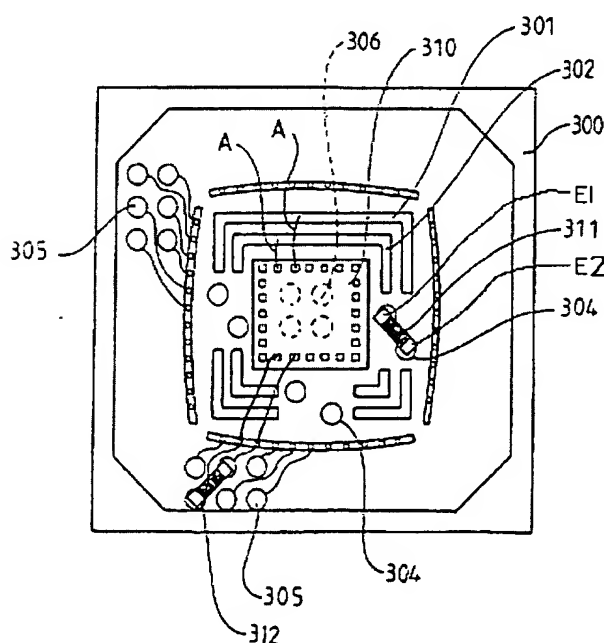
- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tao et al. (US 6,316,828) - hereinafter Tao - in view of Stearns et al. (US 5,895,967) - hereinafter Stearns - further in view of Yamaura et al. (US 6,831,360) - hereinafter Yamaura.
3. Examiner has attached a copy of Tao Fig. 6 to which has been added two reference numerals (E1, E2) used for clarity throughout this rejection.

**FIG. 6**

4. Regarding claim 20, Tao discloses (Fig. 6) a package substrate (300; col 3 ln 41) adapted to carry a die (310; col 3 ln 46-48) of a wire bonding type (A; col 3 ln 37-38), the package substrate at least comprising:

a substrate (300; col 3 ln 41) having a surface, a power pad (301; col 3 ln 45-46) and a ground pad (302; col 3 ln 46), wherein the surface of the substrate having a die bonding area (310; col 3 ln 46), the power pad and the ground pad disposed outside the die bonding area;

at least one passive component (311; col 3 ln 42 – see 311 in Fig 5) disposed between the power pad and the ground pad (clear in Fig 6), the passive component having at least two electrodes (E1, E2) which are connected to the power pad and the ground pad (col 3 ln 44-46) respectively; and

Tao discloses a power pad and a ground pad, but does not expressly disclose a signal pad. Stearns discloses (Fig 4) a chip having power, ground, and signal pads (col 6 ln 56-57) connected to corresponding power (46 & 26; col 6 ln 63), ground (44 & 24; col 6 ln 61-62), and signal (48 & signal connection; col 6 ln 64-65) pads on the substrate, all pads disposed outside the die bonding area. The field of endeavor is chips mounted on a substrate, for both Tao and Stearns. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made that the plurality of connection pads on the substrate of Tao include a signal pad, as taught by Stearns; for at least the purpose of providing a signal to and/or from the chip.

Tao discloses the passive component electrodes are connected to the power pad and ground pad, but does not expressly disclose how the connection is made.

Art Unit: 2811

Yamaura discloses (Fig 3b) a solder connection (5; col 9 ln 52-57) between substrate mounted passive component (3a; col 9 ln 52-54) with a metal layer (3f,3g; col 9 ln 66-67) formed over the passive component electrode (3d; col 9 ln 64), and a metal layer (4b; col 10 ln 7-8) formed on all the substrate pads (4a; col 10 ln 7-9). The field of endeavor is chips and passive components mounted on a substrate, for both Tao and Yamaura. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to cover the passive component electrodes and power, ground, and signal pads of Tao with a metal layer, as taught by Yamaura; for at least the purpose of enhanced contact conductivity.

5. Regarding claim 21, Tao discloses a patterned solder mask layer on the surface of the substrate (col 3 ln 20-22,41), the patterned solder mask layer exposing surfaces of the power pad and the ground pad (304; col 3 ln 20-22). Tao does not expressly disclose the patterned solder mask exposes the surface of a signal pad. However, it would have been obvious to expose the surface of the signal pad taught by Stearns; for at least the purpose of providing an electrical connection to the signal pad.

6. Further regarding claim 21, the product-by-process limitation "the step of forming" has not been given patentable weight. The case law establishing this precedent:

"Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

7. Regarding claim 22, Tao does not disclose the material of the metal layer is nickel. Yamaura discloses a nickel layer on the electrode (3f; col 9 ln 66) and the

Art Unit: 2811

corresponding pad (4d; col 10 ln 1-2). Yamaura further discloses a gold layer formed on all pads (4b; col 10 ln 7-9).

8. Regarding claim 23, Tao discloses the passive component is a capacitor (311 in Fig 4).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew O. Arena whose telephone number is (571) 272-5976. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on (571) 272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven Loke
Primary Examiner

